

REMARKS

We acknowledge the Examiner's indication that dependent claims 7 and 8 would be allowable if amended to be in independent form and to include all of the limitations of the base and intervening claims. We believe however that we are entitled to greater protection than is offered by claims 7 and 8.

Prior Art Rejections

The Examiner rejected claims 2, 3, 4, 10, 12 and 13 as being unpatentable over Graham et al. (U.S. Patent No. 5,072,195, hereafter "Graham") in view of Shigenori (U.S. Patent No. 6,693,862, hereafter "Shigenori").

The Examiner acknowledges that Graham does not disclose that the first reference signal is a wobble signal of an optical disc and the second reference signal is a land prepit signal of the optical disc, as recited in each of independent claims 2, 4 and 12. The Examiner cites Shigenori as disclosing this feature. Although not stated explicitly, it appears that the Examiner is arguing that it would have been obvious to a person of skill in the art to provide Graham's phase-locked loop with a first reference signal that is a wobble signal of an optical disc and a second reference signal that is a land prepit signal of the optical disc. We disagree.

Graham discloses controlling a VCO 2 in accordance with a signal V_{ab} obtained by summing an output signal V_a , which is generated at a filter 502a in a reference phase-locked loop 500a that performs phase and frequency synchronizations, and an output signal V_b , which is generated at a filter 502b in a recovery phase-locked loop 500b that performs a phase synchronization.

Despite the Examiner's belief, Shigemori does not disclose a first loop for generating a first clock signal which is synchronized with a first reference signal and a second loop for generating a second clock signal which is synchronized with a second reference signal, the first reference signal being a wobble signal of an optical disc and the second reference signal being a land prepit signal of the optical disc, as is required in each of independent claims 2, 4 and 12.

Rather, Shigemori discloses a PLL circuit that generates a clock signal which is synchronized with a prepit signal using the prepit signal and a wobble signal.

If a wobble signal were to be provided to Graham's reference phase-locked loop 500a, a clock signal that is synchronized with the frequency and phase of the wobble signal would be generated. However, this clock signal would not accurately reflect the rotation of an optical disc. This is because that the duty ratio of the binary-coded wobble signal varies and changes in the duty ratio of the binary-coded wobble signal may affect the reference phase-locked loop 500a when it is controlled in accordance with the phase and frequency difference between the clock signal generated by the loop 500a and the wobble signal. Accordingly, for this reason alone, we believe that the inventions recited in claims 2, 4, and 12 are not obvious over Graham in view of Shigenori.

The Examiner rejected dependent claim 5 as being unpatentable over Graham in view of Shigenori and further in view of Lee (U.S. 5,734,301). The Examiner also rejected dependent claim 6 as being unpatentable over Graham in view of Shigenori and further in view of Lee and still further in view of Yoshizawa (U.S. 5,909,474). Lee and Yoshizawa were cited as disclosing the feature recited in dependent claims 5 and 6, respectively. Specifically, Lee was cited as disclosing that the second voltage controlled oscillator includes a first input terminal for receiving the first control voltage; a second input terminal for receiving the second control voltage; and a ring oscillator connected to the first and second input terminals and driven by differing first and second control currents respectively corresponding to the first and second control voltages. Yoshizawa was cited as disclosing that the second voltage controlled oscillator further includes a first current control gate corresponding to the first input terminal; and a second current control gate corresponding to the second input terminal; wherein a drive current of the first current control gate is greater than a drive current of the second current control gate; and wherein the first voltage controlled oscillator includes a third input terminal for receiving the first control voltage; and a fourth input terminal for receiving a constant DC voltage. We submit however that neither Lee nor Yoshizawa disclose the feature found to be lacking in both Graham

Applicant : Masashi Kiyose
Serial No. : 10/066,244
Filed : January 31, 2002
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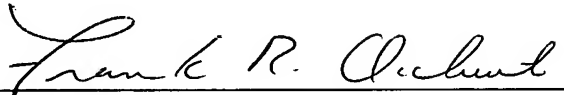
Attorney's Docket No.: 10449-
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and Shigenori. Thus, we submit that dependent claims 5 and 6 are patentable for at least the same reason that independent claim 4 is patentable.

Please apply any other charges, not covered, or credits to deposit account 06-1050, referencing Attorney Docket Number 10449-042001.

Respectfully submitted,

Date: September 13, 2005


Frank R. Occhiuti
Reg. No. 35,306

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

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